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BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268–0001

POSTAL RATE AND FEE CHANGES, 1997 | Docket No. R97–1

RESPONSE OF UNITED STATES POSTAL SERVICE
WITNESS TOLLEY TO INTERROGATORIES OF
THE NEWSPAPER ASSOCIATION OF AMERICA
(NAA/USPS–T6—1–3, 8, 12–17)

The United States Postal Service hereby provides responses of witness Tolley to the following interrogatories of the Newspaper Association of America: NAA/USPS–T6—1–3, 8, 12–17, filed on September 17, 1997. Interrogatories NAA/USPS–T6—4–7,9–11 were redirected to witness Thress.

Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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October 1, 1997

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

NAA/USPS-T6-1. Please refer to your direct testimony at page 15 lines 19 to 20. Please identify and provide all of your analyses which "check prediction performance in the recent past."

RESPONSE:

The most comprehensive analysis of the prediction performance of my current forecasting equations in the recent past is the Forecast Error Analysis program, presented in my Technical Appendix at pages A-32 through A-67.

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
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NAA/USPS-T6-2. Please provide a history of the estimated own-price and cross-price elasticities for each subclass or category of mail presented by you or other employees of RCF for each postal rate or classification proceeding in which you have participated.

RESPONSE:

Please see my direct testimony in Docket Nos. R80-1 (USPS-T-4), R84-1 (USPS-T-6), R87-1 (USPS-T-2), R90-1 (USPS-T-2), R94-1 (USPS-T-2), MC95-1 (USPS-T-16), and MC96-2 (USPS-T-8). In MC97-2, which was subsequently withdrawn, elasticities were cited by Peter Bernstein (USPS-T-2) and Thomas Thress (USPS-T-3). In the present case, elasticities are estimated by my colleague, Mr. Thress in USPS-T-7. The Postal Rate Commission summarizes my price elasticities for third-class bulk regular and nonprofit mail since Docket R84-1 in their Opinion and Recommended Decision in R94-1 at pages II-48 and II-50.

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
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NAA/USPS-T6-3. Please provide separate versions of Chart B (page 27 of your direct testimony) for First Class single piece letters and First Class workshared letters.

RESPONSE:

The Household Diary Study does not report data as presented in Chart B of my testimony separately for single-piece and workshared First-Class letters.

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

NAA/USPS-T6-8. Please provide a version of Table 5 (page 71 of your direct testimony) for single-piece and workshared private first-class cards.

RESPONSE:

CONTRIBUTION TO CHANGE IN
SINGLE-PIECE FIRST-CLASS CARDS VOLUME FROM 1992 TO 1997

| Variable | Percent Change In Variable | Elasticity | Estimated Effect of Variable on Volume |
|---|---|---|---|
| Own price | -2.2% | -0.944 | 2.09% |
| Cross Price First-Class Letters | -0.7% | 0.197 | -0.15% |
| Permanent Income | 4.8% | 0.699 | 3.31% |
| Adult Population | | | 5.64% |
| Other Factors | | | -8.52% |
| Total Change in Volume | | | -1.45% |

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

CONTRIBUTION TO CHANGE IN
WORKSHARED FIRST-CLASS CARDS VOLUME FROM 1992 TO 1997

| Variable | Percent Change In Variable | Elasticity | Estimated Effect of Variable on Volume |
|---|---|---|---|
| Own price | -3.9% | -0.944 | 3.85% |
| Cross Price First-Class Letters | -2.8% | 0.197 | -0.56% |
| Permanent Income | 4.8% | 0.699 | 3.31% |
| Adult Population | | | 5.64% |
| Other Factors | | | 13.70% |
| Total Change in Volume | | | 24.08% |

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

NAA/USPS-T6-12. With regard to the general approach for forecasting mail volumes:

a. Please confirm that mail volumes are indexed to a base period and are then forecasted based on indexes of explanatory variables and the associated elasticities. If you cannot confirm this statement, please explain your approach to forecasting mail volumes.

b. Please explain generally why this "indexing" method is used rather than using values fitted to the original estimated equations.

c. If base period volumes vary from the fitted values due to measurement error or some other non-continuing omitted factor in the econometric analysis, will your methodology inherently perpetuate this variance? Please explain any negative response.

d. Please provide a comparison table of the base period volumes used for each category of mail and the fitted volumes estimated econometrically for the same period.

RESPONSE:

a. Confirmed

b. Base-volume forecasting has been found to provide more accurate volume forecasts than relying on regression-line forecasts. The tendency of deviations from the regression line due to omitted economic variables to persist for several periods makes the recent past, as incorporated into the base period, a better predictor of the forecast period than the regression line is.

A systematic investigation of this issue found that the R87-1 forecasts were more accurate than regression-line forecasts for 16 of the 23 mail categories forecasted in that case. In addition, the R87-1 forecast of total domestic mail was found to have an error of only 0.66 percent, while the regression-line forecast of total domestic mail had an error of 11.04 percent.

c. If base period volumes vary from the fitted values from an econometric equation exclusively due to non-continuing factors which will not persist in the forecast period, then a base-volume forecasting approach will tend to incorrectly perpetuate the effect of these factors into the forecast period. In general, however, this has not been the case with respect to Postal Service volumes. Rather, unmodeled influences present in the base year have more often been found to persist over time, so that base volume forecasts provide more accurate forecasts than regression-line forecasts.

d. Please see Table 1 accompanying this response.

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

**Table 1 Accompanying Response to NAA/USPS-T6-12**
**Comparison of Actual Volumes to Fitted Values from Regressions**

| Mail Category | Actual Volumes | Fitted Volumes |
|---|---|---|
| First-Class Letters | | |
| Single-Piece | 53,043.368 | 53,061.489 |
| Workshared | 39,418.981 | 39,160.606 |
| Stamped Cards | 570.329 | 476.144 |
| Private First-Class Cards | 4,646.935 | 4,674.955 |
| Mailgrams | 5.558 | 4.388 |
| Periodical Within County | 910.993 | 925.899 |
| Periodical Nonprofit | 2,182.805 | 2,234.750 |
| Periodical Classroom | 58.647 | 61.676 |
| Periodical Regular | 7,013.337 | 7,095.142 |
| Standard Single-Piece | 158.735 | 140.876 |
| Standard Regular | 30,924.312 | 31,086.108 |
| Standard ECR | 29,999.206 | 30,068.670 |
| Standard Bulk Nonprofit | 12,718.009 | 12,620.391 |
| Parcel Post | 220.034 | 220.307 |
| Bound Printed Matter | 515.988 | 483.965 |
| Special Rate | 194.157 | 192.925 |
| Library Rate | 28.922 | 27.162 |
| Postal Penalty | 347.651 | 368.430 |
| Free-for-the-Blind | 50.388 | 51.206 |
| Registry | 18.149 | 18.472 |
| Insurance | 30.069 | 28.857 |
| Certified | 283.138 | 278.460 |
| COD | 4.611 | 4.851 |
| Money Orders | 214.709 | 208.899 |

Volumes shown are for the last four quarters of the regression period. For First-Class letters this is 1995Q4 through 1996Q3. For all other mail categories, the relevant time period is 1996Q3 through 1997Q2.

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
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NAA/USPS-T6-13. With regard to the economic data forecasted by DRI/McGraw-Hill (Workpaper 1, page 1-4), please provide a comparison of the economic forecasts from the February 1997 25 year forecast with the most recently available forecasts.

RESPONSE:

Table 1 below presents the economic data used in forecasting taken from DRI/McGraw-Hill's February 1997 25-year forecast (called TREND25YR0297). The most recently available data, which come from the September 1997 10-year forecast (called TRENDLONG0997), are presented in Table 2.

**Table 1 Accompanying NAA/USPS-T6-13**
**Economic Data from TREND25YR0297**

| POSTAL QUARTER | PCE | PC | WPIP | UCAP | YD92 | N22_PLUS |
|---|---|---|---|---|---|---|
| 1997:3 | 5,391.3986 | 1.1219 | 1.6950 | 0.8237 | 5,240 7531 | 183.8106 |
| 1997:4 | 5,461.9355 | 1.1285 | 1.7069 | 0.8209 | 5,291.5971 | 184 2082 |
| 1998:1 | 5,534.1904 | 1.1355 | 1 7200 | 0 8171 | 5,322.5718 | 184.5992 |
| 1998:2 | 5,607.2416 | 1.1430 | 1.7319 | 0.8151 | 5,364.7393 | 184.9914 |
| 1998:3 | 5,674.1240 | 1.1505 | 1.7423 | 0.8144 | 5,381.8050 | 185.3928 |
| 1998:4 | 5,742.8827 | 1.1582 | 1.7525 | 0.8137 | 5,406.4102 | 185.8090 |
| 1999:1 | 5,815.7123 | 1 1660 | 1.7630 | 0.8111 | 5,428.0660 | 186.2368 |
| 1999:2 | 5,889.0161 | 1.1742 | 1 7741 | 0.8102 | 5,463.9136 | 186.6705 |
| 1999:3 | 5,957.4481 | 1 1827 | 1.7859 | 0.8116 | 5,482.0140 | 187.1047 |
| 1999:4 | 6,028.5448 | 1.1911 | 1.7990 | 0.8132 | 5,509.7559 | 187.5352 |
| 2000:1 | 6,103.6803 | 1.1996 | 1.8130 | 0.8141 | 5,532.6749 | 187 9632 |

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**Table 2 Accompanying NAA/USPS-T6-13**
**Economic Data from TRENDLONG0997**

| POSTAL QUARTER | PCE | PC | WPIP | UCAP | YD92 | N22_PLUS |
|---|---|---|---|---|---|---|
| 1997:3 | 5,433.1520 | 1.1250 | 1.6564 | 0.8243 | 5,197.8470 | 183 8106 |
| 1997:4 | 5,512 9914 | 1.1296 | 1.6682 | 0 8224 | 5,227.6412 | 184.2082 |
| 1998:1 | 5,599 4753 | 1 1354 | 1.6821 | 0 8224 | 5,271 2799 | 184 5992 |
| 1998:2 | 5,669.0806 | 1.1408 | 1 6970 | 0.8209 | 5,349.5113 | 184.9914 |
| 1998:3 | 5,733.0764 | 1.1469 | 1.7129 | 0.8175 | 5,391.2962 | 185.3928 |
| 1998 4 | 5,800.2838 | 1.1534 | 1 7273 | 0.8129 | 5,417 5225 | 185.8090 |
| 1999:1 | 5,870.1693 | 1.1601 | 1.7398 | 0 8098 | 5,436.5136 | 186.2368 |
| 1999:2 | 5,941.4740 | 1.1668 | 1.7515 | 0.8078 | 5,481.7611 | 186.6705 |
| 1999:3 | 6,008 8211 | 1.1739 | 1.7626 | 0.8075 | 5,503.4061 | 187.1047 |
| 1999:4 | 6,079.3698 | 1.1811 | 1.7738 | 0.8068 | 5,519 6923 | 187.5352 |
| 2000.1 | 6,149.3351 | 1.1886 | 1.7852 | 0.8071 | 5,531.2576 | 187.9632 |

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

NAA/USPS-T6-14. With regard to your trend forecasting methodology for the price of computer equipment (Workpaper 1, page 1-5):

a. Please provide all of your reasons for determining that a trend forecast for the price of computer equipment represents a reasonable method for forecasting this parameter.

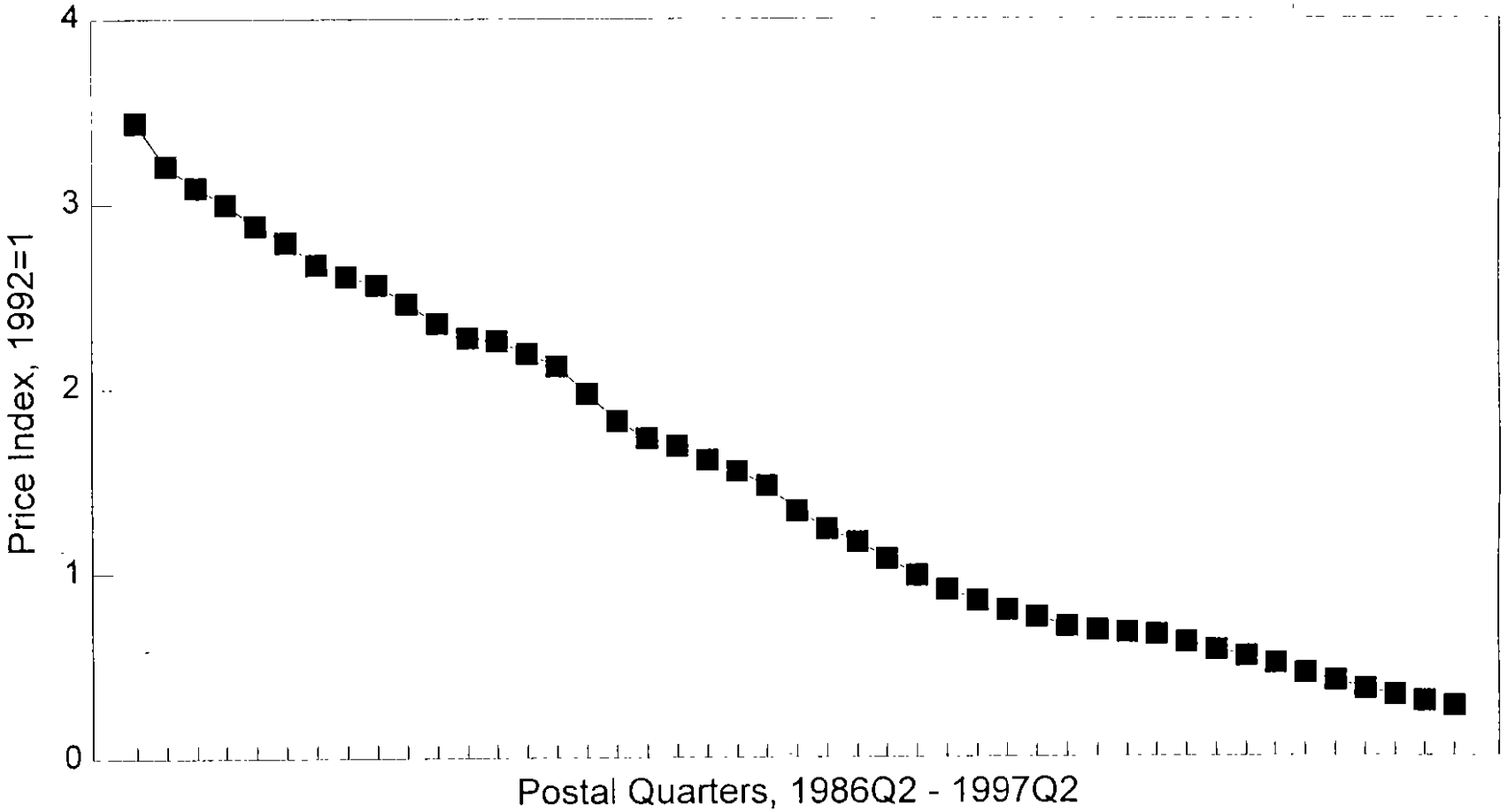
b. Please provide the historical data series for this variable (P_PCE_COMP), including any observations that are currently available but were not used in the econometric analysis.

RESPONSE:
a. Figure 1 accompanying this response plots the real price of computer equipment from 1986Q2 through 1997Q2. Based on observing the data, it appeared that this time series could best be explained by a simple linear trend.

b. The historical data for the nominal price of computer equipment are presented in Workpaper 1 accompanying the testimony of Thomas Thress (USPS-T-7) at page 36. The real price of computer equipment is obtained by dividing this series by the implicit price deflator of personal consumption expenditures (PC), also found in witness Thress's Workpaper 1 (page 35). This variable is subsequently available for the third Postal quarter of 1997. The nominal value of P_PCE_COMP is equal to 0.271765 for this quarter.

# Figure 1 Accompanying NAA/USPS-T6-14

**Real Price of Computer Equipment, 1986 - 1997**



RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

NAA/USPS-T6-15. With regard to your forecast for the CPM for newspaper advertising (Workpaper 1, pages 1-5 to 1-8):

a. Please define the variable LNEWC and indicate its relationship to CPM_NWS.

b. Please provide the actual and fitted observations for LNEWC for the regression analysis shown on page 1-7.

c. Please provide all reasons for your assumption that "[n]ewspaper circulation is assumed to be constant in the forecast period" at page 1-8.

d. Please provide a table of the historical data series for newspaper circulation used in your analysis.

e. Please explain the reasons for a positive coefficient on the AR{1} term and a negative coefficient on the AR{2} term in the Box-Jenkins regression results.

RESPONSE:

a. LNEWC is defined as the natural logarithm of the deflated cost of newspaper advertising index. The deflator is the price index for personal consumption. The CPM_NWS is calculated as the ratio of the deflated cost of newspaper advertising index to the newspaper circulation index.

b. Actual and fitted values of LNEWC are presented in Table 1 below.

c. Please see Table 2 accompanying this response. As shown in this table, newspaper circulation has been relatively stable over time, ranging from a low value of 94.0 in 1972 to a high value of 102.3 in 1990, a range of only 8.8 percent over the past 26 years. In fact, newspaper circulation as shown in Table 2 has varied by less than 4 percent over the past fifteen years. Consequently, an assumption of constant circulation was deemed to be appropriate.

d. Please see Table 2 accompanying this response.

e. AR corrections have been made in the interest of eliminating systematic noise in the residuals, consistent with recommended econometric practice. In the case you asked about, the positive coefficient on the AR{1} term and the negative coefficient on the AR{2} term could possibly indicate that variation in the cost of newspaper advertising index not explained by the price of paper and the general economic activity is due to systematic periodic behavior, or it could indicate the presence of omitted variables that display autocorrelation.

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

**Table 1 Accompanying Response to NAA/USPS-T-15**
**Actual and Fitted Values of LNEWC**

| | ACTUAL | FITTED |
|---|---|---|
| 1971 | 4.76055 | 4.75298 |
| 1972 | 4.72605 | 4.76363 |
| 1973 | 4.72752 | 4.70465 |
| 1974 | 4.73112 | 4.72826 |
| 1975 | 4.76536 | 4.76708 |
| 1976 | 4.81107 | 4.80717 |
| 1977 | 4.83870 | 4.83609 |
| 1978 | 4.83643 | 4.85719 |
| 1979 | 4.84404 | 4.84416 |
| 1980 | 4.84035 | 4.86918 |
| 1981 | 4.86944 | 4.87023 |
| 1982 | 4.90543 | 4.89326 |
| 1983 | 4.95525 | 4.94788 |
| 1984 | 5.00416 | 4.99817 |
| 1985 | 5.03875 | 5.03745 |
| 1986 | 5.07680 | 5.05057 |
| 1987 | 5.10158 | 5.09689 |
| 1988 | 5.12639 | 5.11509 |
| 1989 | 5.14011 | 5.13489 |
| 1990 | 5.13292 | 5.13459 |
| 1991 | 5.10690 | 5.11063 |
| 1992 | 5.08944 | 5.09257 |
| 1993 | 5.07806 | 5.08160 |
| 1994 | 5.08555 | 5.07919 |
| 1995 | 5.09969 | 5.09929 |
| 1996 | 5.12145 | 5.14041 |

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

**Table 2 Accompanying Response to NAA/USPS-T6-15**
**Newspaper Circulation Index, 1970 - 1996**

| | |
|---|---|
| 1971 | 95.00 |
| 1972 | 94.00 |
| 1973 | 95.00 |
| 1974 | 97.00 |
| 1975 | 97.00 |
| 1976 | 97.00 |
| 1977 | 98.00 |
| 1978 | 99.00 |
| 1979 | 99.00 |
| 1980 | 99.00 |
| 1981 | 99.00 |
| 1982 | 100.00 |
| 1983 | 100.00 |
| 1984 | 100.00 |
| 1985 | 101.00 |
| 1986 | 101.00 |
| 1987 | 101.00 |
| 1988 | 101.00 |
| 1989 | 102.00 |
| 1990 | 102.30 |
| 1991 | 101.30 |
| 1992 | 101.40 |
| 1993 | 101.40 |
| 1994 | 100.80 |
| 1995 | 99.60 |
| 1996 | 98.60 |

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

NAA/USPS-T6-16. With regard to your forecast of television CPM (Workpaper 1):

a. Please define the variables LTVCIRC and LTVC and indicate the source of the data.

b. Please provide a table showing the historical data series for actual television circulation, fitted circulation, actual cost and fitted cost. Please include any actual observations that were not included in the econometric analysis.

c. Please provide all reasons why a quadratic time trend method was used to forecast television circulation.

RESPONSE:

a. LTVCIRC is the natural logarithm of the per capita circulation index for television advertising. LTVC is the natural logarithm of the deflated cost of television advertising. I create cost and circulation indexes for television by calculating a weighted average of the spot, network and cable series.

The cost and circulation advertising indexes for the different segments of television media are provided by McCann-Erickson. The cost index is deflated by the implicit price deflator for personal consumption expenditures. Circulation is deflated by adult population (age 22 and over). Both of these series were obtained from DRI/McGraw-Hill.

b. Please see Table 1 accompanying this response.

c. As can be observed in table 1, LTVCIRC decreases from the beginning of the sample to the beginning of the 1990's. At this point, the circulation index inflects and increases. This configuration is not well reproduced by a linear trend and suggests the existence of a quadratic time trend. Confirmation is provided by the t-statistic of 8.59

on the quadratic term in the regression.

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

**Table 1 Accompanying Response to NAA/USPS-T-16**
**Actual and Fitted Values of LTVCIRC and LTVC**

| | LTVCIRC | | LTVC | |
|---|---|---|---|---|
| | ACTUAL | FITTED | ACTUAL | FITTED |
| 1960 | -0.4429 | NA | 4.4025 | NA |
| 1961 | -0.4601 | NA | 4.4413 | NA |
| 1962 | -0.4745 | NA | 4.4306 | NA |
| 1963 | -0.4424 | NA | 4.4896 | NA |
| 1964 | -0.4183 | NA | 4.5418 | NA |
| 1965 | -0.3974 | NA | 4.5694 | NA |
| 1966 | -0.3977 | NA | 4.6086 | NA |
| 1967 | -0.3759 | NA | 4.6360 | NA |
| 1968 | -0.3631 | NA | 4.6372 | NA |
| 1969 | -0.3637 | NA | 4.6672 | NA |
| 1970 | -0.3699 | NA | 4.5898 | NA |
| 1971 | -0.3357 | NA | 4.5276 | NA |
| 1972 | -0.3079 | -0.3062 | 4.6677 | 4.6202 |
| 1973 | -0.2965 | -0.2935 | 4.6748 | 4.7418 |
| 1974 | -0.2842 | -0.2931 | 4.6451 | 4.6941 |
| 1975 | -0.2985 | -0.2913 | 4.6304 | 4.6172 |
| 1976 | -0.3133 | -0.3098 | 4.7653 | 4.7117 |
| 1977 | -0.3240 | -0.3279 | 4.8097 | 4.8299 |
| 1978 | -0.3397 | -0.3423 | 4.8510 | 4.8581 |
| 1979 | -0.3608 | -0.3598 | 4.8642 | 4.8841 |
| 1980 | -0.3806 | -0.3810 | 4.8465 | 4.8593 |
| 1981 | -0.3984 | -0.4005 | 4.8641 | 4.8645 |
| 1982 | -0.4198 | -0.4177 | 4.9107 | 4.8464 |
| 1983 | -0.4382 | -0.4371 | 4.9412 | 4.9453 |
| 1984 | -0.4447 | -0.4534 | 5.0138 | 4.9980 |
| 1985 | -0.4528 | -0.4597 | 5.0440 | 5.0223 |
| 1986 | -0.4630 | -0.4666 | 5.0690 | 5.0518 |
| 1987 | -0.4854 | -0.4745 | 5.0682 | 5.0939 |
| 1988 | -0.4956 | -0.4913 | 5.0735 | 5.0956 |
| 1989 | -0.4874 | -0.4979 | 5.0755 | 5.0840 |
| 1990 | -0.5089 | -0.4893 | 5.0672 | 5.0715 |
| 1991 | -0.5155 | -0.5034 | 4.9970 | 5.0536 |
| 1992 | -0.5076 | -0.5050 | 5.0088 | 5.0225 |
| 1993 | -0.4859 | -0.4946 | 5.0374 | 5.0320 |
| 1994 | -0.4522 | -0.4726 | 5.1032 | 5.0658 |
| 1995 | -0.4377 | -0.4406 | 5.1471 | 5.1120 |
| 1996 | -0.4333 | -0.4230 | 5.2249 | NA |

RESPONSE OF POSTAL SERVICE WITNESS TOLLEY
TO INTERROGATORIES OF NAA

NAA/USPS-T6-17. With regard to your forecast of radio CPM (Workpaper 1):

a. Please define the variables LRADCIRC and LRADC and indicate the source of the data.

b. Please provide a table showing the historical data series for actual radio circulation, fitted circulation, actual cost and fitted cost. Please include any actual observations that were not included in the econometric analysis.

c. Please provide all reasons why a quadratic time trend method was used to forecast radio circulation.

RESPONSE:

a. LRADCIRC is the natural logarithm of the per capita circulation index for radio advertising. LRADC is the natural logarithm of the deflated cost of radio advertising. I create cost and circulation indexes for radio by calculating a weighted average of the spot and network series.

The cost and circulation advertising indexes for the two components of radio are provided by McCann-Erickson. The cost index is deflated by the implicit price deflator for personal consumption expenditures. Circulation is deflated by adult population (age 22 and over). Both of these series were obtained from DRI/McGraw-Hill.

b. Please see Table 1 accompanying this response.

c. An examination of the radio circulation index for recent years revealed that it has been flattening and suggested the need for a quadratic term. The t-statistic on the quadratic term of 3.94 confirms the desirability of including it.

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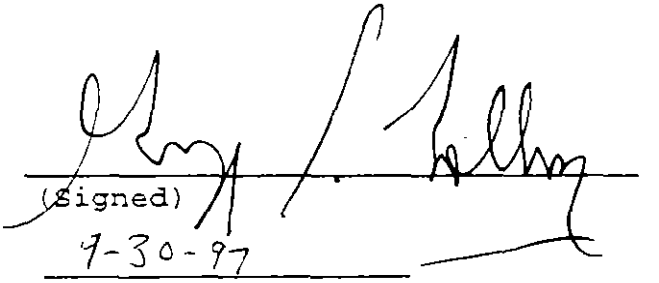
TO INTERROGATORIES OF NAA

**Table 1 Accompanying Response to NAA/USPS-T-17**
**Actual and Fitted Values of LRADCIRC and LRADC**

| | LRADCIRC | | LRADC | |
|---|---|---|---|---|
| | ACTUAL | FITTED | ACTUAL | FITTED |
| 1960 | -0.2458 | NA | 4.9598 | NA |
| 1961 | -0.2547 | NA | 4.9487 | NA |
| 1962 | -0.2642 | NA | 4.9646 | NA |
| 1963 | -0.2740 | NA | 4.9539 | NA |
| 1964 | -0.2960 | NA | 4.9676 | NA |
| 1965 | -0.3305 | NA | 4.9784 | NA |
| 1966 | -0.3302 | NA | 5.0034 | NA |
| 1967 | -0.3293 | NA | 5.0250 | NA |
| 1968 | -0.3173 | NA | 5.0089 | NA |
| 1969 | -0.3232 | NA | 4.9715 | NA |
| 1970 | -0.3190 | NA | 4.9715 | NA |
| 1971 | -0.3353 | NA | 4.8784 | NA |
| 1972 | -0.3416 | -0.3361 | 4.8933 | NA |
| 1973 | -0.3485 | -0.3457 | 4.8854 | 4.8852 |
| 1974 | -0.3451 | -0.3554 | 4.8322 | 4.8322 |
| 1975 | -0.3639 | -0.3611 | 4.8140 | 4.8139 |
| 1976 | -0.3737 | -0.3745 | 4.8373 | 4.8375 |
| 1977 | -0.3933 | -0.3845 | 4.8661 | 4.8661 |
| 1978 | -0.3934 | -0.3978 | 4.8795 | 4.8793 |
| 1979 | -0.3940 | -0.4039 | 4.8697 | 4.8695 |
| 1980 | -0.4044 | -0.4100 | 4.8643 | 4.8642 |
| 1981 | -0.4230 | -0.4194 | 4.9023 | 4.9023 |
| 1982 | -0.4308 | -0.4314 | 4.9151 | 4.9150 |
| 1983 | -0.4387 | -0.4394 | 4.9463 | 4.9461 |
| 1984 | -0.4446 | -0.4473 | 5.0037 | 5.0038 |
| 1985 | -0.4696 | -0.4541 | 5.0225 | 5.0224 |
| 1986 | -0.4746 | -0.4676 | 5.0231 | 5.0229 |
| 1987 | -0.4689 | -0.4738 | 4.9681 | 4.9679 |
| 1988 | -0.4706 | -0.4759 | 4.9664 | 4.9664 |
| 1989 | -0.4816 | -0.4804 | 4.9770 | 4.9769 |
| 1990 | -0.4823 | -0.4880 | 4.9709 | 4.9709 |
| 1991 | -0.4944 | -0.4918 | 4.9031 | 4.9033 |
| 1992 | -0.4989 | -0.4994 | 4.8404 | 4.8404 |
| 1993 | -0.5113 | -0.5040 | 4.8770 | 4.8769 |
| 1994 | -0.5101 | -0.5113 | 4.9223 | 4.9224 |
| 1995 | -0.5099 | -0.5135 | 4.9431 | 4.9431 |
| 1996 | -0.5150 | -0.5158 | 4.9701 | 4.9699 |

DECLARATION

I, George Tolley, declare under penalty of perjury that the foregoing answers are true and correct to the best of my knowledge, information and belief.



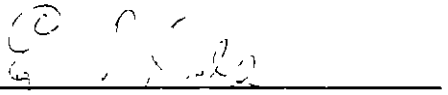
(Signed)

1-30-97

(Date)

## CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.



Eric P. Koetting

475 L'Enfant Plaza West, S.W.
Washington, D.C. 20260–1137
October 1, 1997